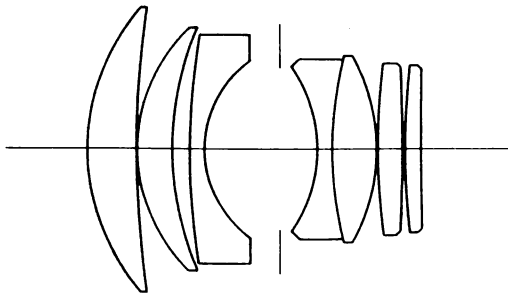


MINOLTA AF 85mm F1.4 (2592-100)
MINOLTA MAXXUM AF 85mm F1.4 (2592-600)

LENS



Construction : 7 elements in 6 groups
 Type : Gauss
 Coating : Minolta Achromatic
 Angle of view : 28°30'
 Lens mount : Minolta A mount
 Lens signal contact : 5 contacts
 Diaphragm : Automatic preset diaphragm
 F No. : Maximum 1.4
 Minimum 22
 Full-stop setting 8 stops
 Diaphragm blade : 9 blades

DIMENSIONS & WEIGHT

Dimensions : $\phi 78$ max. diameter) \times
 71.5 max. length)mm
 Weight : 550g
 Filter-thread diameter : $\phi 72$ mm (P=0.75)
 Lens hood : Exclusive for 2592 (Bayonet type)

ACCESSORIES

Lens case : LH-1053
 Lens hood : 6592-810

FOCUSING

Focusing : AF, FA, M
 Type : Floating system
 Minimum focusing distance : 0.85m
 Distance scale :

3	3.5	4	5	7	10	15	30	(ft)
0.85	1	1.2	1.5	2	3	5	10	(m)

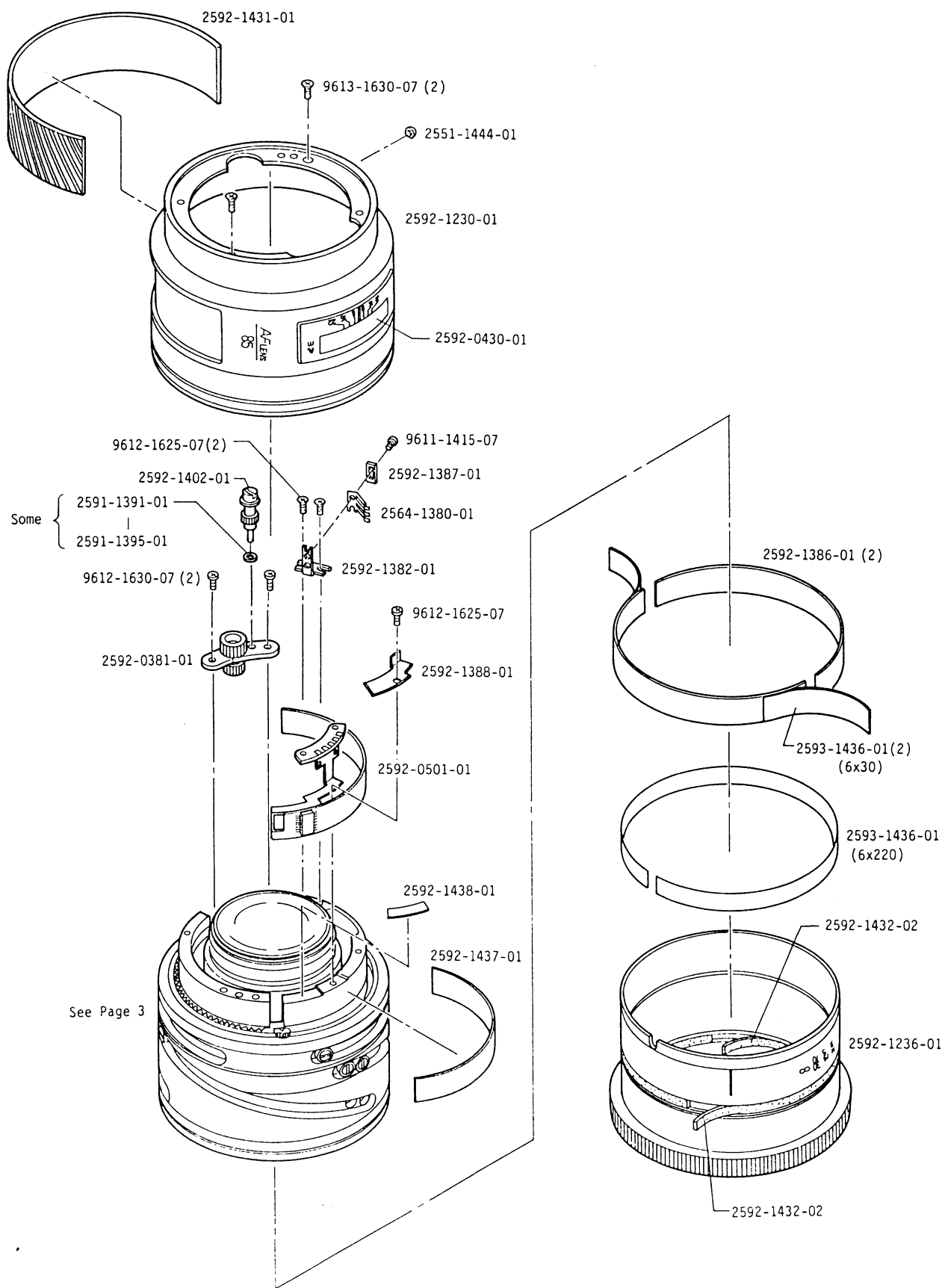
 Infrared correction scale : Yes
 Depth-of-field scale : 8 · 16 · 22

I N D E X

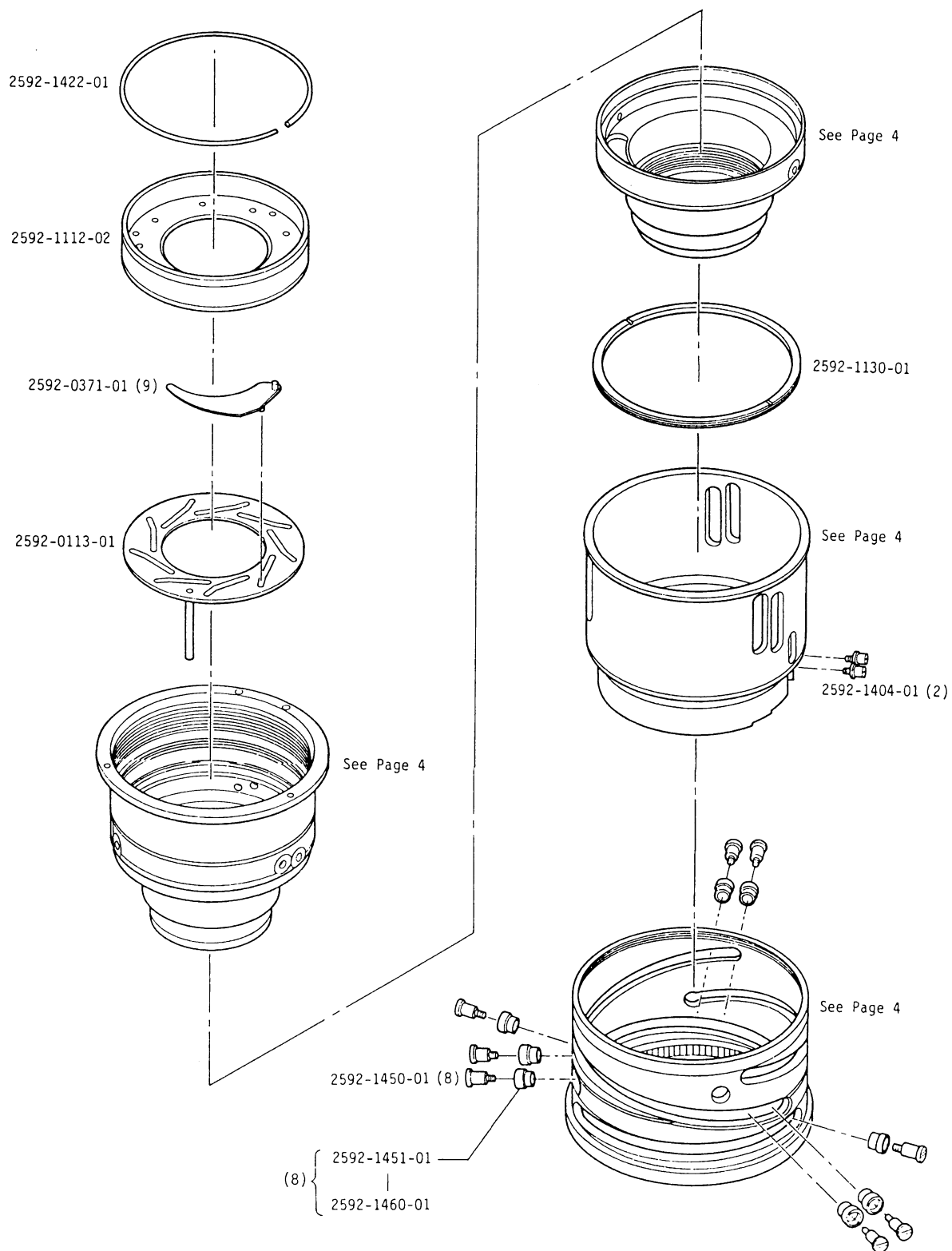
PART NO.	PAGE	PART NO.	PAGE	PART NO.	PAGE
2592-0110	----- 4	2564-1380	----- 2	2592-1455	----- 3
2592-0113	----- 3	2592-1382	----- 2	2592-1456	----- 3
2592-0240	----- 1	2592-1386	----- 2	2592-1457	----- 3
2592-0371	----- 3	2592-1387	----- 2	2592-1458	----- 3
2592-0381	----- 2	2592-1388	----- 2	2592-1459	----- 3
2592-0430	----- 2	2591-1391	----- 2	2592-1460	----- 3
2592-0501	----- 2	2591-1392	----- 2	2592-1641	----- 1
2592-0810	----- 4	2591-1393	----- 2	2592-1801	----- 4
		2591-1394	----- 2	2592-1802	----- 4
2592-1101	----- 4	2591-1395	----- 2	2592-1803	----- 4
2592-1103	----- 4	2592-1402	----- 2		
2592-1104	----- 4	2592-1404	----- 3	9611-1415-07	----- 2
2592-1105	----- 4	2564-1420	----- 1	9611-1422-07	----- 1
2592-1112	----- 3	2592-1422	----- 3	9611-1630-07	----- 1
2592-1130	----- 3	2550-1424	----- 1	9611-2055-04	----- 1
2592-1230	----- 2	2592-1431	----- 2		
2592-1235	----- 1	2592-1432	----- 2	9612-1625-07	----- 2
2592-1236	----- 2	2593-1436	----- 2	9612-1630-07	----- 2
2592-1241	----- 1	2592-1437	----- 2		
2592-1242	----- 1	2592-1438	----- 2	9613-1630-07	----- 2
2552-1361	----- 1	2551-1444	----- 2		
2552-1362	----- 1	2550-1446	----- 1	9763-1740-07	----- 1
2552-1363	----- 1	2592-1450	----- 3		
2552-1364	----- 1	2592-1451	----- 3		
2552-1365	----- 1	2592-1452	----- 3		
2592-1372	----- 1	2592-1453	----- 3		
2550-1374	----- 1	2592-1454	----- 3		



PART NO.	PART NAME		QTY.
2592-0240-01	BAYONET MOUNT SET	バヨネットマウントセット	1
(2550-1446-01)	SCREW	ストッパービス	1
2592-1235-01	FRONT RING	鏡頭環	1
2592-1241-01	NAME RING (-100)	飾り環	1
2592-1242-01	LIGHT SHIELD RING	遮光筒	1
2552-1361-01	BACK WASHER-A (T=0.05)	バックワッシャー	} SOME
2552-1362-01	BACK WASHER-B (T=0.07)	バックワッシャー	
2552-1363-01	BACK WASHER-C (T=0.1)	バックワッシャー	
2552-1364-01	BACK WASHER-D (T=0.2)	バックワッシャー	
2552-1365-01	BACK WASHER-E (T=0.5)	バックワッシャー	
2592-1372-01	PRESET RING	プリセッティング	1
2550-1374-01	PRESET RING PRESSURE	プリセッティング押え	1
2564-1420-02	MAIN SPRING	メインスプリング	1
2550-1424-01	SPRING	アーススプリング	1
2592-1641-01	NAME RING (-600)	飾り環	1
9611-1422-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	3
9611-1630-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	3
9611-2055-04	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	4
9763-1740-07	TAP TITE SCREW	十字穴付タップタイトねじ	2



PART NO.	PART NAME		QTY.
2592-0381-01	GEAR SET	ギヤーセット	1
2592-0430-01	DISTANCE SCALE WINDOW SET	距離表示窓セット	1
2592-0501-01	FLEXIBLE PCB SET	フレキ基板セット	1
2592-1230-01	OUTER RING	固定保持環セット	1
2592-1236-01	FOCUSING RING	距離リング	1
2564-1380-01	BRUSH	ブラシ	1
2592-1382-01	CONNECTING PLATE	ブラシ連動板	1
2592-1386-01	CAM BARREL COVER	カム環補強板	2
2592-1387-01	BRUSH PRESSURE PLATE	ブラシ押え板	1
2592-1388-01	BASE PLATE	フレキ台板	1
2591-1391-01	ADJUSTMENT WASHER (T=0.05)	カブラー調整ワッシャー	} SOME
2591-1392-01	ADJUSTMENT WASHER (T=0.07)	カブラー調整ワッシャー	
2591-1393-01	ADJUSTMENT WASHER (T=0.1)	カブラー調整ワッシャー	
2591-1394-01	ADJUSTMENT WASHER (T=0.2)	カブラー調整ワッシャー	
2591-1395-01	ADJUSTMENT WASHER (T=0.5)	カブラー調整ワッシャー	
2592-1402-01	COUPLER	カブラー	1
2592-1431-01	LEATHER	貼皮	1
2592-1432-02	FRICTION PLATE	摩擦布	2
2593-1436-01	TAPE (PER/ROLL)	テープ	1
2592-1437-01	TAPE	テープ	1
2592-1438-01	TAPE	テープ	1
2551-1444-01	BAYONET POINT	バヨネット標点	1
9611-1415-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	1
9612-1625-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	3
9612-1630-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	2
9613-1630-07	PHILLIPS TYPE SCREW	十字穴付半皿小ねじ	2



PART NO.	PART NAME	QTY.
2592-0113-01	DIAPHRAGM OPERATION PLATE SET 絞り操作板セット	1
2592-0371-01	DIAPHRAGM BLADE SET 絞り羽根セット	9
2592-1112-02	DIAPHRAGM PRESSURE RING 絞り押え環	1
2592-1130-01	CAM BARREL PRESSURE RING カム環押え	1
2592-1404-01	FOCUS STOPPER PIN フォーカスストッパー	2
2592-1422-01	PRESSURE SPRING 絞り押え環SP	1
2592-1450-01	GUIDE PIN 案内ピン	8
2592-1451-01	GUIDE ROLLER (D1=5.03,D2=4.53) 案内ローラー	8
2592-1452-01	GUIDE ROLLER (D1=5.03,D2=4.52) 案内ローラー	
2592-1453-01	GUIDE ROLLER (D1=5.03,D2=4.51) 案内ローラー	
2592-1454-01	GUIDE ROLLER (D1=5.02,D2=4.53) 案内ローラー	
2592-1455-01	GUIDE ROLLER (D1=5.02,D2=4.52) 案内ローラー	
2592-1456-01	GUIDE ROLLER (D1=5.02,D2=4.51) 案内ローラー	
2592-1457-01	GUIDE ROLLER (D1=5.01,D2=4.53) 案内ローラー	
2592-1458-01	GUIDE ROLLER (D1=5.01,D2=4.52) 案内ローラー	
2592-1459-01	GUIDE ROLLER (D1=5.01,D2=4.51) 案内ローラー	
2592-1460-01	GUIDE ROLLER (D1=4.98,D2=4.48) 案内ローラー	

REPAIR GUIDE

- The contents of this manual are in accordance with the assembling procedure.
Therefore, follow the reverse procedure when disassembling.

—Description of marks used—

- [B] : Adhesive
[S] : Solvent
[A] : Anti-diffusion agent
[G] : Grease
■ : Point of assembling and general caution

■ Assembly and adjustment procedure	Page
① Cam barrel set, Diaphragm blade set.....	1
② Flexible PCB set, Focusing ring	2
③ Outer ring, Bayonet mount set.....	3
■ Aperture diameter adjusting, aperture diameter pre-checking	3
④ Middle lens barrel set, Front ring, Lens G1, Name ring.....	4
■ Flange back (f' F) adjusting	4
■ Projection resolving power checking	4
■ Aperture diameter checking.....	4
■ General function checking.....	4
■ Flange back (f' F) adjusting procedure.....	5
■ Lens ROM signal selecting procedure	6
■ Description of focusing	8
■ Schematic circuit diagram, Printed wiring diagram	9

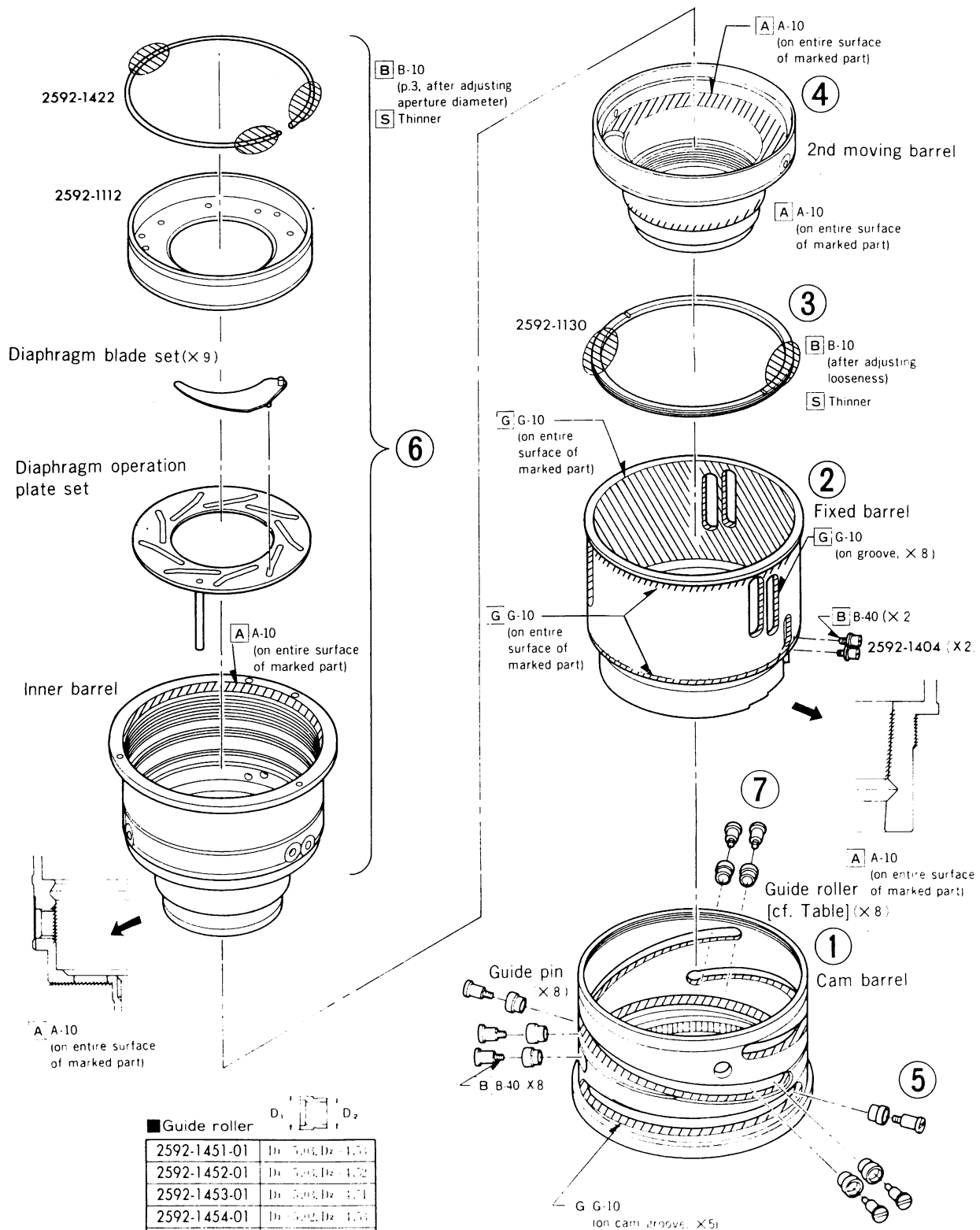
■ Precautions

- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
Use Fronsolve or alcohol when cleaning.
Never use thinner, ketone or ether.
- Since this lens uses MOS-IC, it is necessary to take special precautions about static electricity.
When performing repair, use the conductive mat as shown.

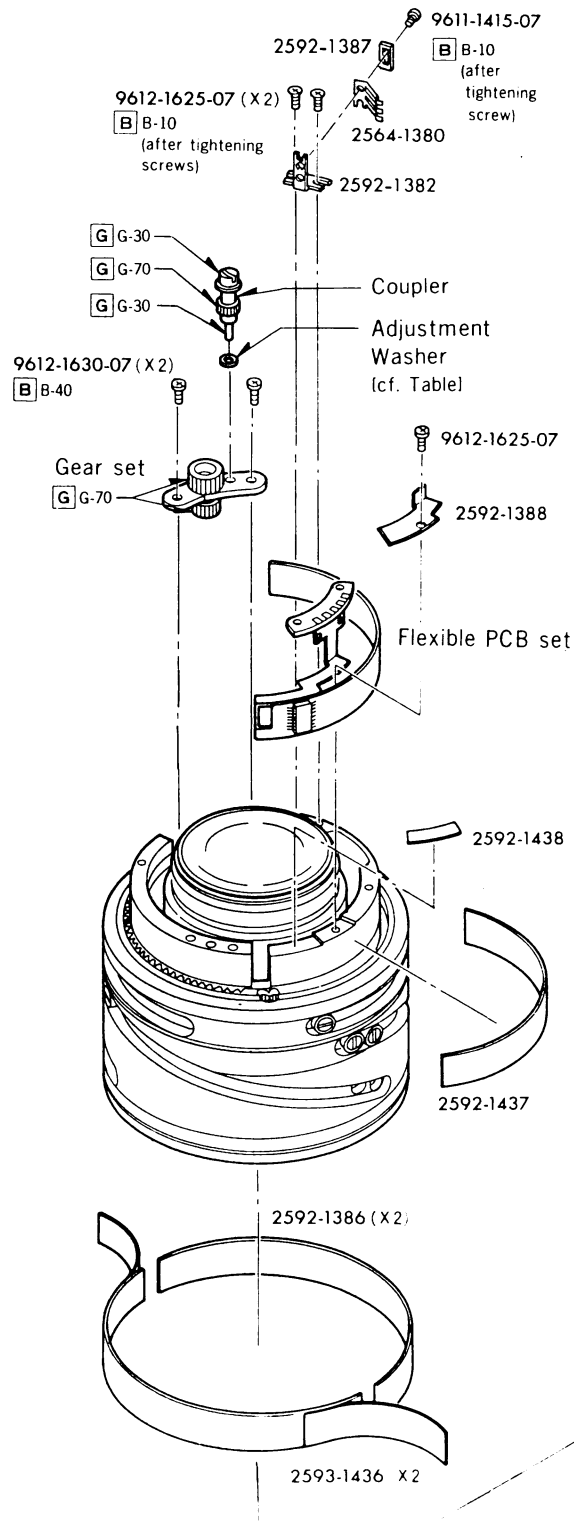


1 Cam barrel set, Diaphragm blade set

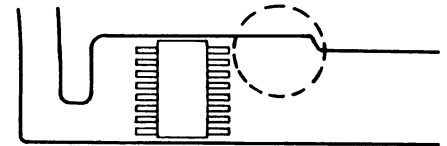
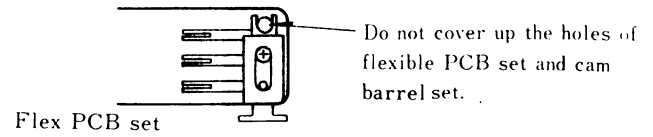
■ Assemble the parts in order of ① — ⑦



2 Flexible PCB set, Focusing ring



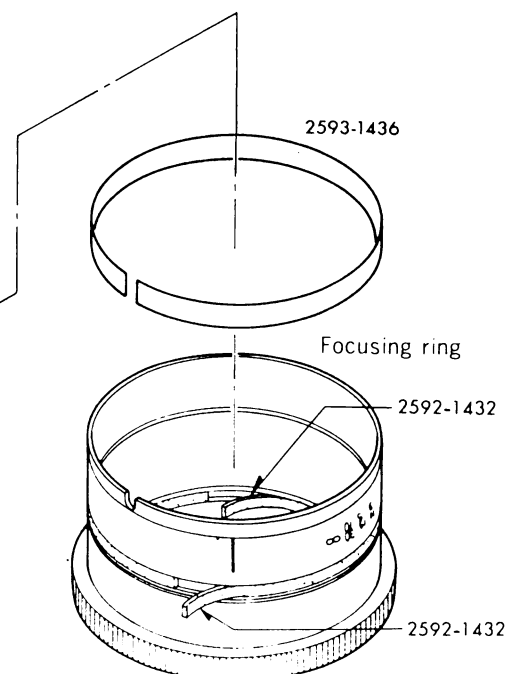
■ Installing position of 2564-1380



- Be sure to set the printed wires in a dotted-lined circle as they were before replacing flexible PCB set.
- Please refer to p.6-7 "Lens ROM signal selecting procedure" at replacing lens.

■ Adjustment washer

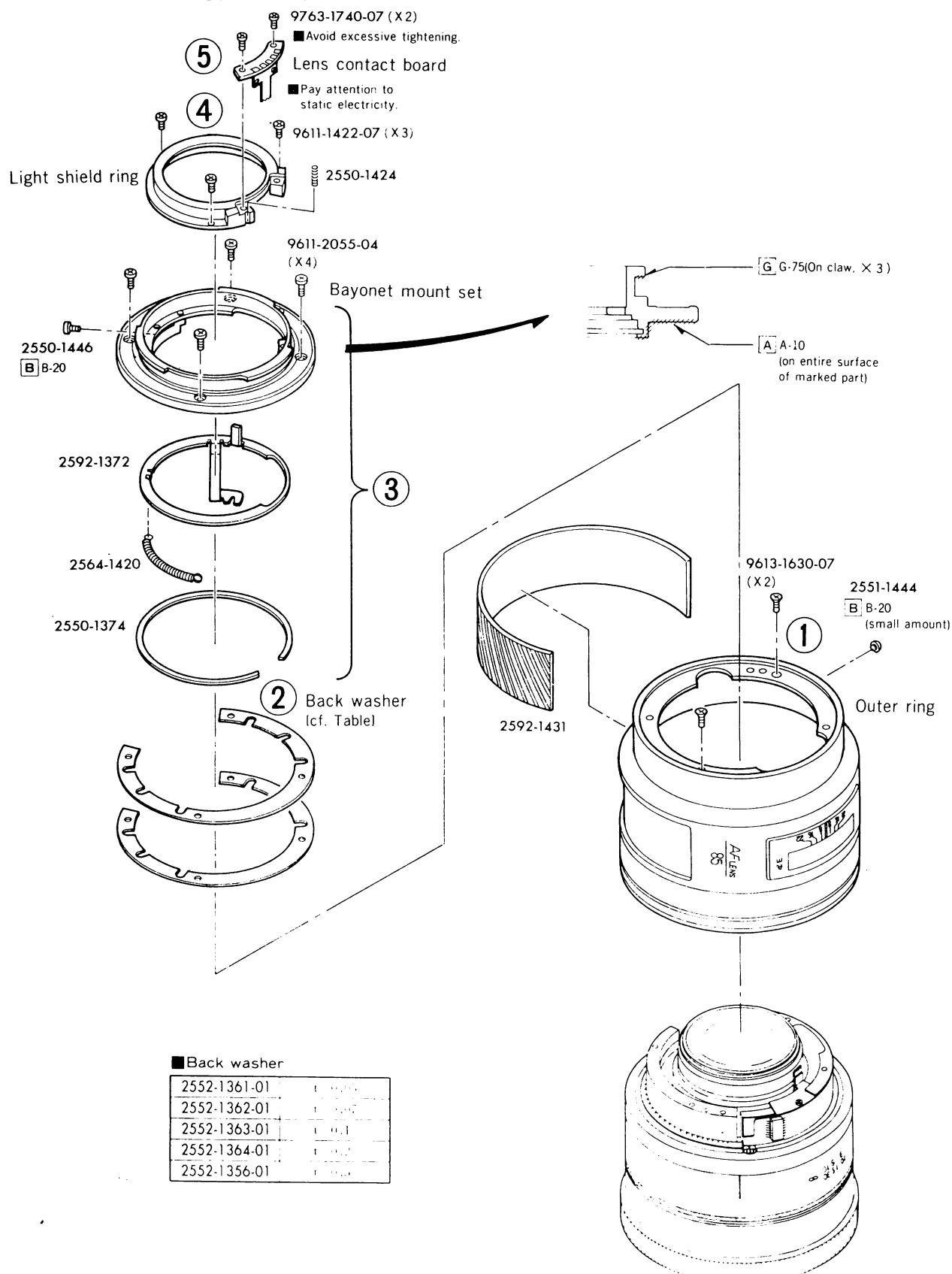
2591-1391-01	t=0.05
2591-1392-01	t=0.07
2591-1393-01	t=0.1
2591-1394-01	t=0.2
2591-1395-01	t=0.5



3 Outer ring, Bayonet mount set

■ Assemble the parts in order of ①—⑤.

After assembling them, check and adjust the aperture diameter. (cf. p.8-9 of "General checking /adjusting procedure")



■ When repairing following parts, must be checked resolving power by projection.

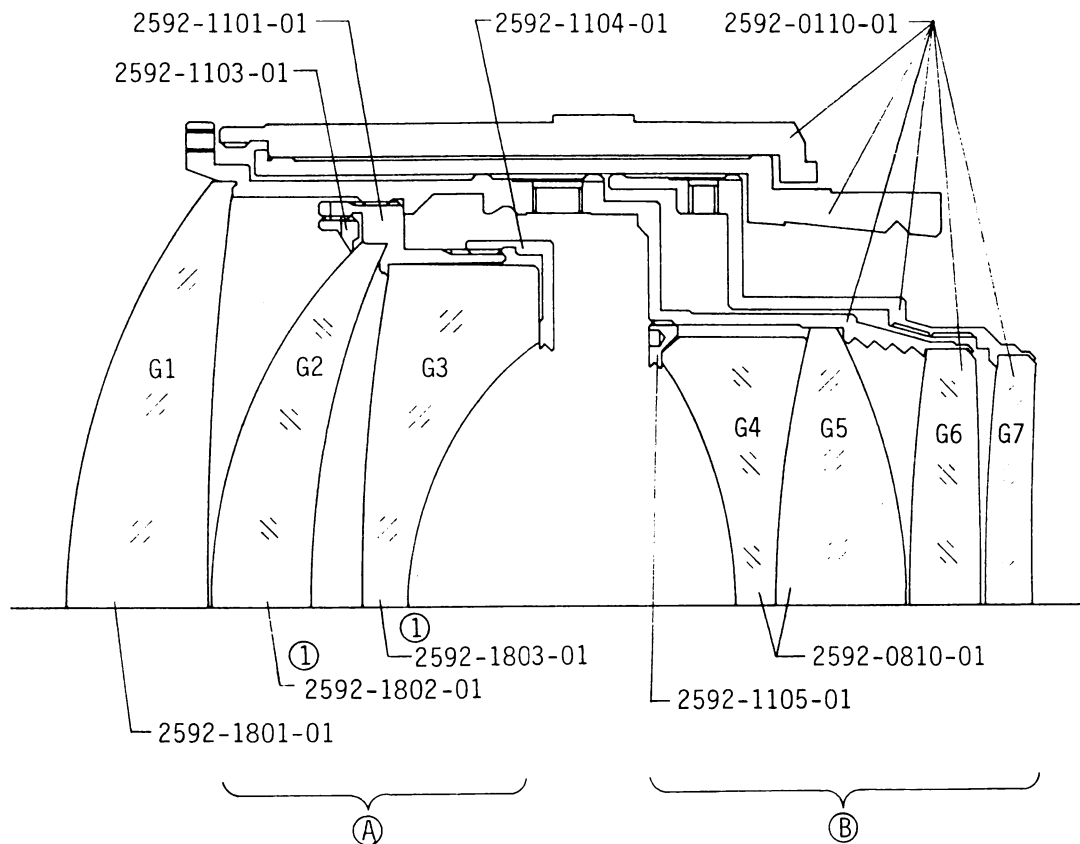
■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

①: The influential lens element in the lens performance. (Number shows in order.)

①: レンズ性能によく影響するレンズ。(数字は順位を示す)

Ⓐ: The influential lens group in the lens performance. (Influence: In alphabetical order)

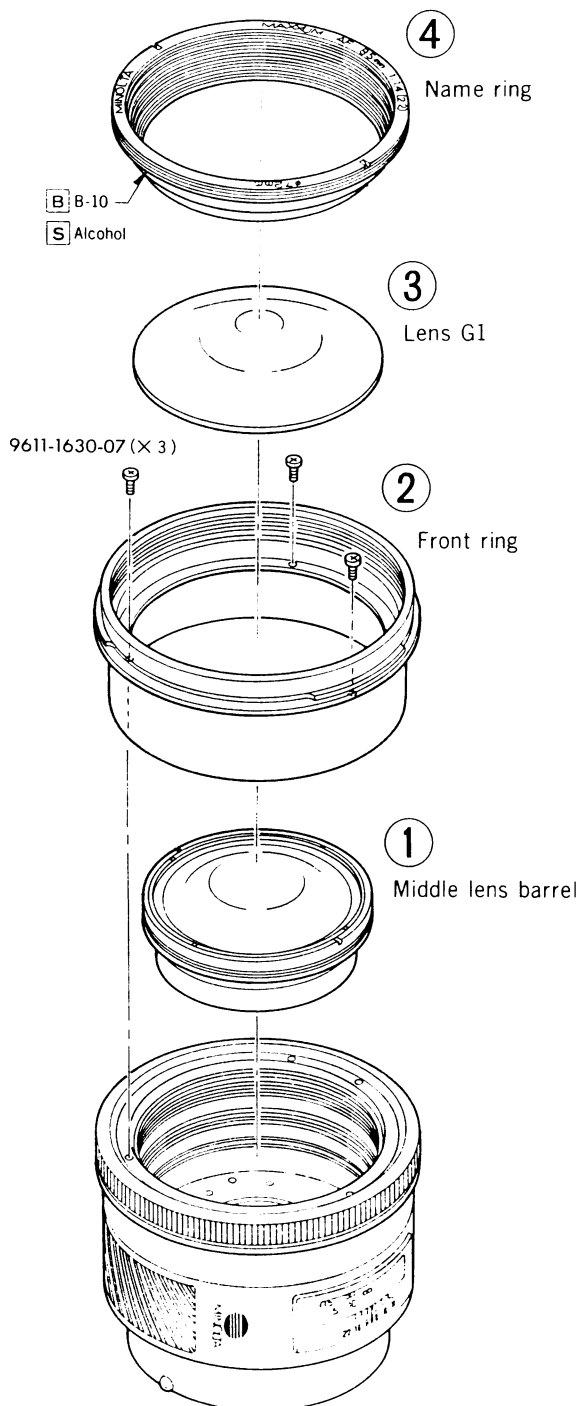
Ⓐ: レンズ性能によく影響するレンズ群。(影響度: アルファベット順)



PART NO.	PART NAME		QTY.
2592-0110-01	CAM BARREL SET	カム環セット	1
2592-0810-01	LENS G4,G5 SET	レンズG4, 5セット	1
2592-1101-01	MIDDLE LENS BARREL	中玉棒	1
2592-1103-01	G2 PRESSURE RING	G2押え	1
2592-1104-01	G3 PRESSURE RING	G3押え	1
2592-1105-01	G4,G5 PRESSURE RING	G4, 5押え	1
2592-1801-01	LENS G1	レンズG1	1
2592-1802-01	LENS G2	レンズG2	1
2592-1803-01	LENS G3	レンズG3	1

4 Middle lens barrel set, Front ring, Lens G1, Name ring

■ Assemble the parts in order of ①—④.



■ After assembling, perform the following adjusting.

1. Flange back adjusting (referring to Flange back adjusting procedure on p.5).

$$\text{Allowable range } f'F = 44.58^{+0.03}_0$$

2. Projection resolving power checking (referring to General checking/adjusting procedure on p.6).

Allowable range for Servicing (min.)

f (mm)	Distance D (m)	Center (y' = 0)	y' = 15	
			S	M
85	3.56	100	64	64

S : Sagittal image

M : Meridional image

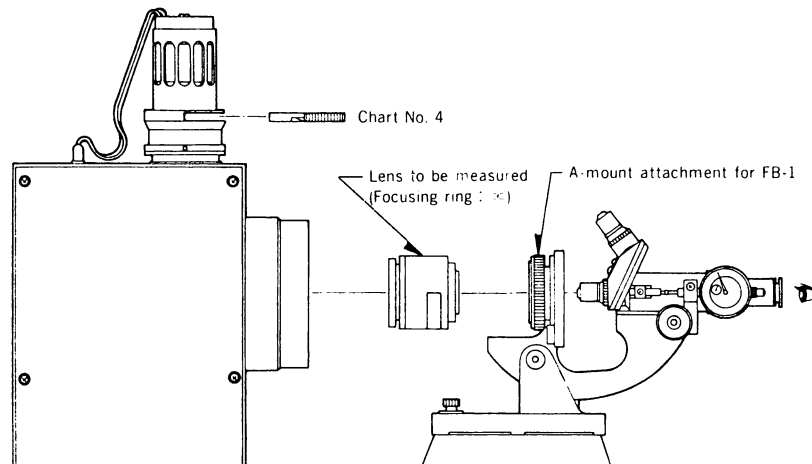
3. Check aperture diameter (referring to General checking/adjusting procedure on p.9).
4. Check General functioning (referring to General checking/adjusting procedure on p.14).

■ Flange back adjusting

- Measuring instruments : Collimator (Model RC-1000 I⁺, II⁺, III) ※Discontinued model
: Flange back checking tester (FB-1)
: A-mount attachment for FB-1
: Flange back gauge (43.50mm)

■ Preparation

- Set lens and measuring instruments as Fig. below.



■ Adjusting procedure

(For preparation of measuring instruments and measurement of flange back, see "Flange back (f'F) measuring, adjusting procedure" of General checking/adjusting procedure on p.1.)

1. Check if flange back value meets allowable range ($44.58^{+0.03}_0$)

If out of allowable range, calculate correct value.

(Example) Measured flange back value : 44.50

Allowable range : 44.58 ~ 44.61

$44.58 - 44.50 = 0.08$ | Decrease back washer thickness (0.08 ~ 0.11mm)

$44.61 - 44.50 = 0.11$ | to meet allowable range.

- If measured flange back value is shorter than allowable range...decrease back washer thickness
- If measured flange back value is longer than allowable range...increase back washer thickness

2. Remove back washer from lens unit.
3. Measure thickness of original back washer. Then select proper total thickness of back washer.
Classified back washers are given on p.3.
4. After assembling, make sure that flange back meets allowable range.

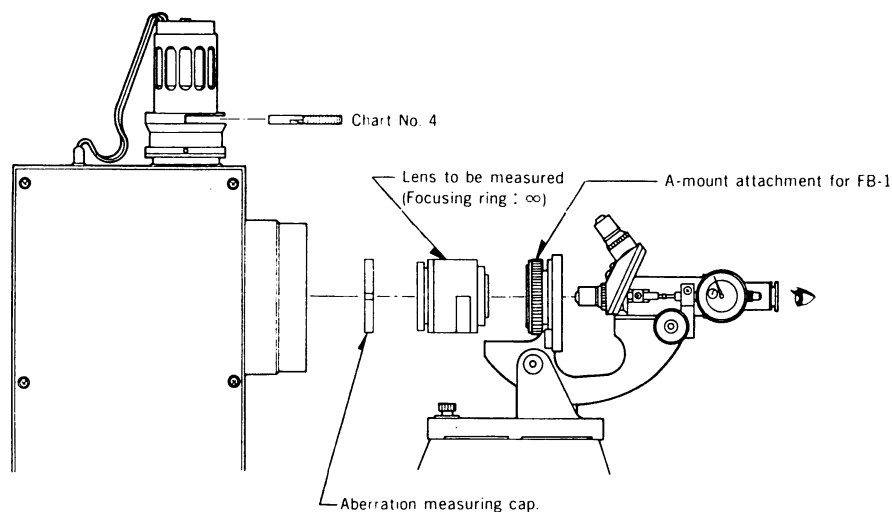
If out of allowable range, repeat above procedures 1-3.

■ Lens ROM signal selecting procedure

- Measuring instruments : Collimator (Model RC-1000 I*, II*, III) ※Discontinued model
 : Flange back checking tester (FB-1)
 : A-mount attachment for FB-1
 : Flange back gauge (+43.50mm)
 : Aberration measuring cap (F8) 2592-0001-75

■ Preparation

- Set lens and measuring instruments as Fig. below.



■ Measuring of focus shift caused by stopping-down of aperture

- Set the-lens-to-be-measured to A-mount attachment.
- Measure f'F value at full-opening aperture.
- Attach aberration-measuring-cap (F8) and measure f'F value.
 - Since chart-image becomes dark, be careful not to make measuring-error.
- Obtain focus shift value (spherical aberration) from difference of f'F between F8 and full-opening.

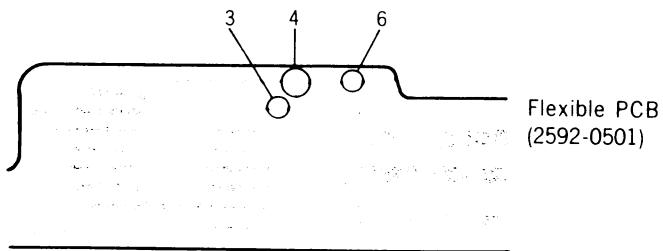
$$f'F \text{ at F8} - f'F \text{ at full-opening aperture} = \text{focus shift value caused by stopping down}$$

- Corresponding to the focus shift value, select lens ROM signal by cutting printed wire.

■ Type of flexible PCB based on focus shift value

Type of flex PCB	Display on I/O Tester	Cutting point of flex PCB	Focus shift value
3	Type 3	At point 3	Unsettled
4	Type 4	At point 4	Unsettled
5	Type 5	No cutting	-0.08 ± 0.03 ($+0.05$ to $+0.11$)
6	Type 6	At point 6	-0.08 ± 0.06 ($+0.12$ to $+0.14$)

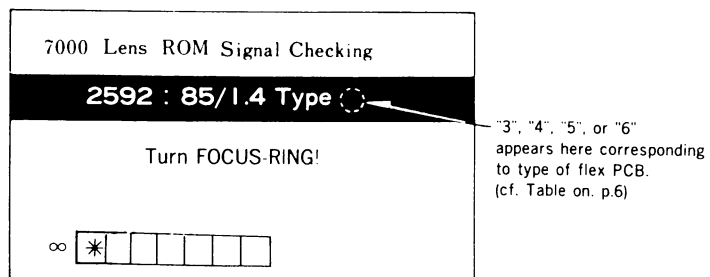
■Cutting point of flexible PCB



■Display on I/O Tester

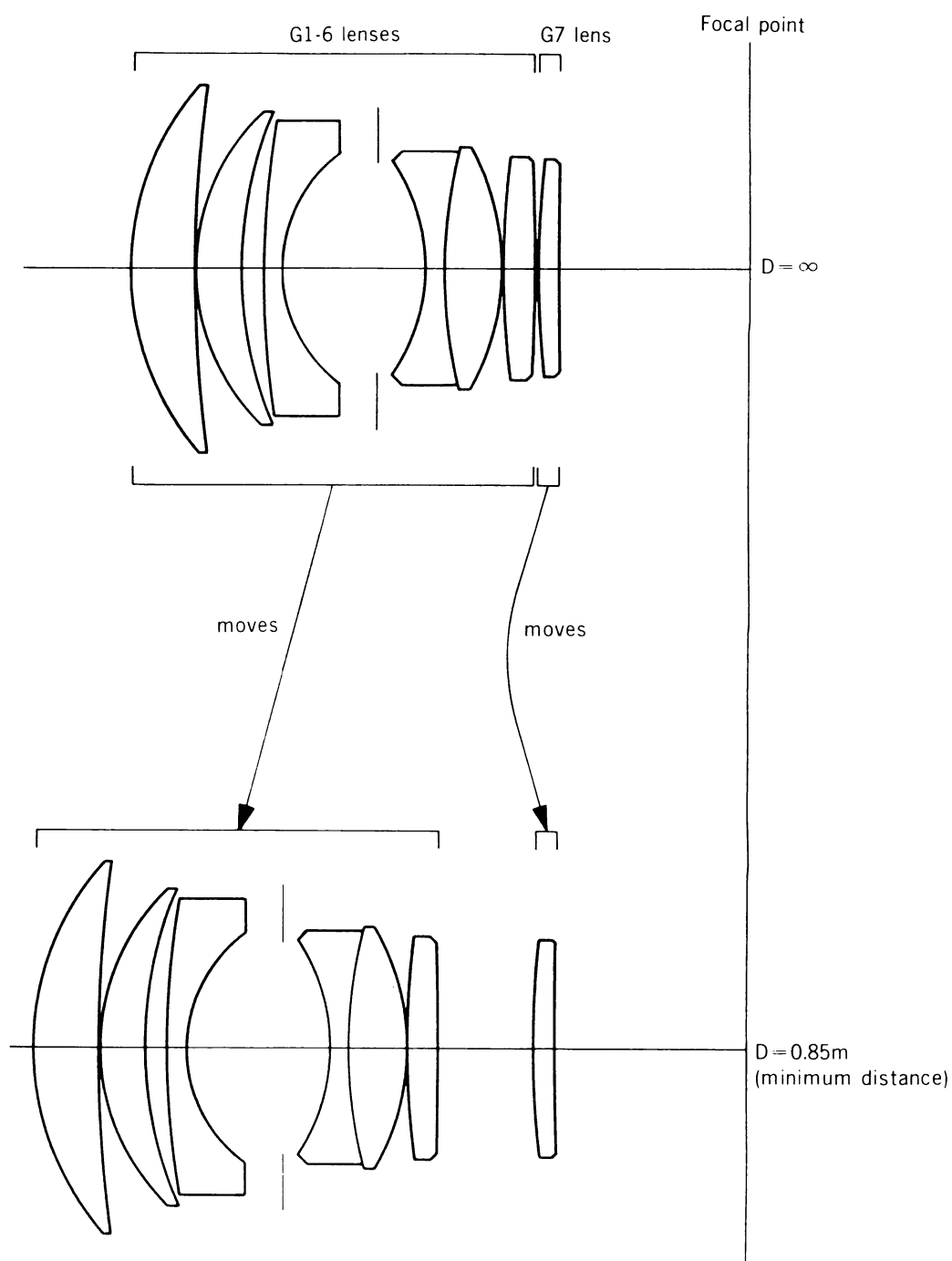
Set the lens, referring to p.14 of "General checking/adjusting procedure."

Check the type of flexible PCB is correct.

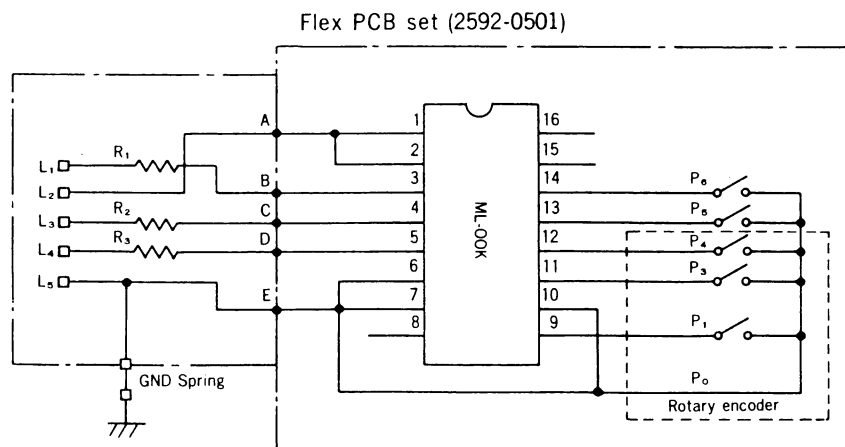


■ Description of focusing

- Floating system (1st and 2nd lens groups move independently.)



■ Schematic circuit diagram, Printed wiring diagram



L_{1-5} : Lens signal contacts

R_{1-3} : Printed resistors

ML-00K : ROM-IC

A-E : Soldering points

$P_{0,1,3,4}$: Rotary encoder pattern Sw.
(ON \leftrightarrow OFF by moving focusing ring)

$P_{5,6}$: Sw. by cutting off printed wires.

■ Pay attention to it at replacing flexible PCB

Flex PCB set (2592-0501)

